

SEQUENCE LISTING

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<110> Turnbull et al.
 <120> CIRCULAR TEMPLATES AND METHODS
 <130> ARK007-215/98215
 <140> 09/283,569
 <141> 1999-03-31
 <150> 60/080,198
 <151> 1998-03-31
 <160> 48
 <170> WordPerfect 8 (saved in ASCII format)
 <210> 1
 <211> 44
 <212> DNA
 <213> Artificial Sequence
 <220>
 <221> modified base
 <222> positions 23, 26, 34, 36, and 37
 <223> completely synthesized
 <223> n represents 5-methylcytidine
 <400> 1



tcctctttt ttcttcaca cntnttttt ttntnttca cact 44

<210> 2
 <211> 11
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> completely synthesized
 <400> 2

aaaaagagga a 11

<210> 3
 <211> 17
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> completely synthesized
 <400> 3

gaagaaaaaaa gagga 17

<210> 4
<211> 17
<212> DNA
<213> Artificial Sequence
<220>
<223> completely synthesized
<400> 4

ttcctctttt ttcttc 17

<210> 5
<211> 44
<212> DNA
<213> Artificial Sequence
<220>
<221> modified base
<222> positions 22, 25, 33, 35, and 36
<223> completely synthesized
<223> n represents 5-methylcytidine
<400> 5

tctctcccc ctctccaca cntntcccc centnnttca cact 44

<210> 6
<211> 44
<212> DNA
<213> Artificial Sequence
<220>
<221> modified base
<222> positions 22, 25, 27, 28, 29, 30, 31, 32, 33, 35, and 36
<223> completely synthesized
<223> n represents 5-methylcytidine
<400> 6

tctctcccc ctctccaca cntntnnnn nnntnnttca cact 44

<210> 7
 <211> 44
 <212> DNA
 <213> Artificial Sequence
 <220>
 <221> modified base
 <222> positions 7, 8, 9, 10, 11, 12 and 28, 29, 30, 31, 32, 33
 <223> y and y both represent the base thymine
 <220>
 <221> modified base
 <222> positions 23, 26, 34, 36, 37
 <223> n represents the modified base, 5-methylcytidine
 <220>
 <223> completely synthesized
 <400> 7

ttcctcyyyy yyttccac acntntyyy yyyntnnttc acac 44

<210> 8
 <211> 44
 <212> DNA
 <213> Artificial Sequence
 <220>
 <221> modified base
 <222> positions 7, 8, 9, 10, 11, 12 and 28, 29, 30, 31, 32, 33
 <223> y and y both represent the base cytosine
 <220>
 <221> modified base
 <222> positions 23, 26, 34, 36, 37
 <223> n represents the modified base, 5-methylcytidine
 <220>
 <223> completely synthesized
 <400> 8

ttcctcyyyy yyttccac acntntyyy yyyntnnttc acac 44

<210> 9
 <211> 44
 <212> DNA
 <213> Artificial Sequence
 <220>
 <221> modified base
 <222> positions 7, 8, 9, 10, 11, 12
 <223> y represents cytosine
 <220>
 <221> modified base
 <222> positions 28, 29, 30, 31, 32, 33
 <223> y represents 5-methylcytidine
 <220>
 <221> modified base
 <222> positions 23, 26, 34, 36, 37
 <223> n represents 5-methylcytidine
 <220>
 <223> completely synthesized
 <400> 9

ttcctcyyyy yyttccac acntntyyy yyyntnttc acac 44

<210> 10
 <211> 31
 <212> DNA
 <213> Artificial Sequence
 <220>
 <221> modified base
 <222> positions 13, 16, 24, 26, 27.
 <223> n represent 5-methylcytidine.
 <223> completely synthesized
 <400> 10

tttctccac acntntttt tttntnttc a 31

<210> 11
 <211> 12
 <212> DNA
 <213> Artificial Sequence

<220>

<223> completely synthesized

<400> 11

acttcctctt tt

12

<210> 12

<211> 16

<212> DNA

<213> Artificial Sequence

<220>

<223> completely synthesized

<400> 12

cttattcgat tgttcc

16

<210> 13

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> completely synthesized

<400> 13

ttcttcggtt gcttcttc

18

<210> 14

<211> 13

<212> DNA

<213> Artificial Sequence

<220>

<223> completely synthesized

<400> 14

aataaggaag aag

13

<210> 15

<211> 34

<212> DNA

<213> Artificial Sequence

<220>

<223> completely synthesized

<400> 15

gcttcttcct tgtagctta ttccttcttc gttt 34

<210> 16
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> modified base
<222> positions 3, 4, 6, 7, 8
<223> n represent 5-methylcytidine
<223> completely synthesized
<400> 16

ttntntnnac acaccctcct t 21

<210> 17
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> completely synthesized
<400> 17

tcctttttt tttttcttc t 21

<210> 18
 <211> 21
 <212> DNA
 <213> Artificial Sequence
 <220>
 <221> modified base
 <222> position 2
 <223> n represents 5-methylcytidine
 <220>
 <221> modified base
 <222> position 5
 <223> n represents 5-methylcytidine
 <220>
 <221> modified base
 <222> position 18
 <223> n represents 5-methylcytidine.
 <220>
 <221> modified base
 <222> position 19
 <223> n represents 5-methylcytidine.
 <220>
 <221> modified base
 <222> position 20
 <223> n represents 5-methylcytidine.
 <223> completely synthesized
 <400> 18

tnntnttttt tttttnnn t

21

<210> 19
 <211> 21
 <212> DNA
 <213> Artificial Sequence
 <220>

<221> modified base
<222> positions 15, 16, 18, 20
<223> n represent 5-methylcytidine
<223> completely synthesized
<400> 19

tctctectac acatnntntn t 21

<210> 20
<211> 37
<212> DNA
<213> Artificial Sequence
<220>
<223> completely synthesized
<400> 20

gggaggaaag aagaaaaaaa aaaaaggga gagagga 37

<210> 21
<211> 85
<212> DNA
<213> Artificial Sequence
<220>
<221> modified base
<222> positions 43, 44, 45, 46, 47, 48, 52, 55, 68, 69,70, 73, 75, 77, 78
<223> n represents 5-methylcytidine.
<223> completely synthesized
<400> 21

tctctcttc ccttttttt ttttcttct ttctccac acannntntt ttntntttt 60

tttttttnn ntntntntt acaca 85

<210> 22
<211> 13
<212> DNA
<213> Artificial Sequence
<220>
<223> completely synthesized
<220>

<223> Description of artificial sequence: primer
<400> 22

gggaggaaag aag

13

<210> 23
<211> 12
<212> DNA
<213> Artificial Sequence
<220>
<223> completely synthesized
<220>
<223> Description of artificial sequence: substrate
<400> 23

aaaaaaaaaa aa

12

<210> 24
<211> 12
<212> DNA
<213> Artificial Sequence
<220>
<223> completely synthesized
<220>
<223> Description of artificial sequence: primer
<400> 24

gggaagagag ga

12

<210> 25
<211> 12
<212> DNA
<213> Artificial Sequence
<220>

<223> completely synthesized
<220>
<223> Description of artificial sequence: primer
<400> 25

gggaggaaag aa

12

<210> 26
<211> 11
<212> DNA
<213> Artificial Sequence
<220>
<223> completely synthesized
<220>
<223> Description of artificial sequence: primer
<400> 26

ggaagagagg a

11

<210> 27
<211> 26
<212> DNA
<213> Artificial Sequence
<220>
<221> modified base
<222> position 13
<223> y represents cytosine
<223> completely synthesized
<400> 27

tectctcttc ccyttcttt cctccc

26

<210> 28

<211> 26
 <212> DNA
 <213> Artificial Sequence
 <220>
 <221> modified base
 <222> positions 1, 2, 3, 5, 6, 10, 13, 15, 16, 17, 20, 22, 24, 25
 <223> n represents 5-methylcytidine
 <220>
 <221> modified base
 <222> positions 24
 <223> y represents cytosine
 <223> completely synthesized
 <400> 28

nnntnnttn ttynnnntn tntnt 26

<210> 29
 <211> 12
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> completely synthesized
 <220>
 <223> Description of artificial sequence: primer
 <400> 29

gggaggaaag aa 12

<210> 30
 <211> 11
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> completely synthesized
 <220>
 <223> Description of artificial sequence: primer
 <400> 30

ggaagagagg a 11

<210> 31
 <211> 37
 <212> DNA
 <213> Artificial Sequence
 <220>
 <221> modified base
 <222> positions 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25
 <223> y represents cytosine
 <223> completely synthesized
 <400> 31

ccctccttc tcyyyyyyy yyyccctt ctctct 37

<210> 32
 <211> 37
 <212> DNA
 <213> Artificial Sequence
 <220>
 <221> modified base
 <222> positions 2,3, 5, 7, 10, 11, 12, 25, 28, 32, 33, 35, 36, 37
 <223> n represents 5-methylcytidine
 <220>
 <221> modified base
 <222> positions 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
 <223> y represents cytosine
 <223> completely synthesized
 <400> 32

tnntntntn nnyyyyyyy yyyntntt tntnnn 37

<210> 33
 <211> 16
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> modified base
 <222> positions 1, 2, 3, 4 5, 6, 7 8 9 10, 11, 12, 13, 14, 15, 16
 <223> r represents adenine or guanine
 <220>
 <223> completely synthesized
 <400> 33

|||||

16

<210> 34
 <211> 44
 <212> DNA
 <213> Artificial Sequence
 <220>
 <221> modified base
 <222> positions 16, 17, 19, 27, 30
 <223> n represents 5-methylcytidine
 <220>
 <221> modified base
 <222> positions 1, 2, 20, 21, 22, 23, 24, 25, 40, 41, 42, 43, 44
 <223> y represents thymine
 <223> completely synthesized
 <400> 34

yyctcctca cactnnyny yyyyytntn cacaccttct yyyy 44

<210> 35

<211> 44
 <212> DNA
 <213> Artificial Sequence
 <220>
 <221> modified base
 <222> positions 16, 17, 19, 27, 30
 <223> n represents 5-methylcytidine
 <220>
 <221> modified base
 <222> positions 1, 2, 20, 21, 22, 23, 24, 25, 40, 41, 42, 43, 44
 <223> y represents cytosine
 <223> completely synthesized
 <400> 35

yyctcctca cactnnyny yyyyytntn cacaccttct yyy 44

<210> 36
 <211> 44
 <212> DNA
 <213> Artificial Sequence
 <220>
 <221> modified base
 <222> positions 16, 17, 19, 27, 30
 <223> n represents 5-methylcytidine
 <220>
 <221> modified base
 <222> positions 1, 2, 20, 21, 22, 23, 24, 25, 40, 41, 42, 43, 44
 <223> y represents cytosine or 5-methylcytidine
 <223> completely synthesized
 <400> 36

yytccttca cactnnyny yyyytntn cacaccttct yyy 44

<210> 37

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<221> modified base

<222> positions 8, 9, 11, 19, 22

<223> n represents 5-methylcytidine

<220>

<221> modified base

<222> positions 12, 13, 14, 15, 16, 17, 33, 34, 35, 36, 37, 38

<223> y represents thiamine

<223> completely synthesized

<400> 37

cttctctyyy yytcttcca cacntntyy yyyyntntt caca 44

<210> 38

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<221> modified base

<222> positions 8, 9, 11, 19, 22

<223> n represents 5-methylcytidine

<220>

<221> modified base

<222> positions 12, 13, 14, 15, 16, 17, 33, 34, 35, 36, 37, 38

<223> y represents cytosine

<223> completely synthesized
<400> 38

cttctctctctctctctccacacntntnttyyyyntntntt caca 44

<210> 39
<211> 44
<212> DNA
<213> Artificial Sequence
<220>
<221> modified base
<222> positions 8, 9, 11, 19, 22
<223> n represents 5-methylcytidine
<220>
<221> modified base
<222> positions 12, 13, 14, 15, 16, 17, 33, 34, 35, 36, 37, 38
<223> y represents cytosine or 5-methylcytidine
<223> completely synthesized
<400> 39

cttctctctctctctctccacacntntnttyyyyntntntt caca 44

<210> 40
<211> 17
<212> DNA
<213> Artificial Sequence
<220>
<221> modified base
<222> positions 6, 7, 8, 9, 10, 11
<223> r represents adenine or guanine
<220>
<223> completely synthesized

<400> 40

gaagarrrrr rgaggaa

17

<210> 41

<211> 17

<212> DNA

<213> Artificial Sequence

<220>

<223> completely synthesized

<400> 41

cttctttttt tctcctt

17

<210> 42

<211> 12

<212> DNA

<213> Artificial Sequence

<220>

<223> completely synthesized

<400> 42

aaaaaagagg aa

17

<210> 43

<211> 17

<212> DNA

<213> Artificial Sequence

<220>

<223> completely synthesized

<400> 43

gaagaaaaaa agaggaa

17

<210> 44

<211> 12

<212> DNA

<213> Artificial Sequence

<220>

<221> modified base

<222> positions 1, 2, 3, 4, 5, 6

<223> r represents adenine or guanine

<220>

<223> completely synthesized

<400> 44

rrrrrgagg aa

12

<210> 45

<211> 11

<212> DNA

<213> Artificial Sequence

<220>

<221> modified base

<222> positions 1, 2, 3, 4, 5

<223> r represents adenine or guanine

<220>

<223> completely synthesized

<400> 45

rrrrrgagga a

11

<210> 46

<211> 10

<212> DNA

<213> Artificial Sequence

<220>

<221> modified base

<222> positions 1, 2, 3, 4

<223> r represents adenine or guanine

<220>

<223> completely synthesized

<400> 46

rrrrgaggaa

10

<210> 47

<211> 10

<212> DNA

<213> Artificial Sequence

<220>

<221> modified base

<222> positions 6, 7, 8, 9, 10
<223> r represents adenine or guanine
<220>
<223> completely synthesized
<400> 47

gaagarrrrr 10

<210> 48
<211> 11
<212> DNA
<213> Artificial Sequence
<220>
<221> modified base
<222> positions 6, 7, 8, 9, 10, 11
<223> r represents adenine or guanine
<220>
<223> completely synthesized
<400> 48

gaagarrrrr r 11